



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,687	12/20/2001	Robert E. Ray JR.	SP-1212.1 (EVE01 P-778)	2319
20875	7590	05/03/2004	EXAMINER	
ROBERT W WELSH EVEREADY BATTERY COMPANY INC 25225 DETROIT ROAD P O BOX 450777 WESTLAKE, OH 44145			CANTELMO, GREGG	
			ART UNIT	PAPER NUMBER
			1745	

DATE MAILED: 05/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/034,687

Applicant(s)

RAY ET AL.

Examiner

Gregg Cantelmo

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 13-24, 28-37, 43 and 44 is/are rejected.
- 7) ☒ Claim(s) 8-12, 25-27 and 38-42 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. In response to the amendment received February 25, 2004:
 - a. The 112 rejection has been withdrawn in light of the amendment;
 - b. The prior art rejection stands as modified in light of the amendment to the claims.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5, 7, 13-18, 20-24, 28-35, 37, 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP '751, of record and for the reasons of record.

JP '751 discloses an electrochemical cell comprising a container 4 having a bottom end and an open end, a positive electrode 1 and negative electrode 2 disposed in the container 4, a seal member 6 disposed in the open top of the container for closing the open top end of the container, the seal member having an opening defined by an upstanding wall, a current collector shaft 5 extending through the opening in the seal member, contacting the electrode 2, wherein the current collector is interference fit within the opening such that the wall of the seal member sealingly engages the shaft of

Art Unit: 1745

the current collector when in a sealed position and one of the wall of the seal member and the current collector is axially movable relative to the other of the wall and seal member to move to a vent position upon experiencing a pressure so as to provide a pressure relief passage between the seal member 6 and the current collector 5 (Fig. 3 as applied to claims 1, 16, 24 and 32).

The seal member and current collector form a collector and seal assembly (Fig. 3 as applied to claims 2, 22, 29 and 33).

The current collector is forced to move to a vent position (Fig. 3 as applied to claims 3 and 34).

An outer cover 13 and a conductive connector 9 are coupled to the current collector (Fig. 3 as applied to claims 4, 17 and 35).

An inner cover 4 is electrically insulated from the outer cover (Fig. 3 as applied to claim 5).

The conductive connector 9 is a plate spring and the configuration shown in Fig. 3 is of a bowl shape (as applied to claims 7, 18, 20 and 37).

The seal member comprises a polymeric material including polypropylene (translation page 6, about ll. 18-23 as applied to claims 13, 31 and 43).

The collector assembly and seal member are configured to engage (Figs. 2 and 3 as applied to claims 14 and 44).

The electrolyte is an alkaline electrolyte (claim and page 3, second paragraph of the translation as applied to claims 15, 23, 30).

Art Unit: 1745

The conductive connector 9 is a plate spring which applies a biasing force to the current collector 5 to force the collector towards the seal member (Figs. 2 and 3 as applied to claim 21).

A vent path is provided in the seal to prevent resealing of the current collector 5 and seal member 6 when in the vent position as shown in Fig. 3 (applied to claim 28).

The difference between the instant claims and JP '751 is that JP '751 does not disclose of providing a pressure relief passage between the upstanding wall of the seal member and the current collector to vent pressurized gases.

As is seen in Figs. 2 and 3 of JP '751 the general concept of moving the current collector relative to a seal member in a battery to create a vent passage between them is known. JP '751 teaches that forming the vent structure between at least a significant portion of the seal and the current collector provides an optimal venting design in a battery.

In reviewing the instant application, the specification discloses on page 16, lines 1-5:

"While the various embodiments described herein provide a pressure relief passage achieved by relative axial movement between a collector and a seal, it should be appreciated that other vent passages may be provided. For example, the relative movement between the seal and collector may be designed to cause the seal hub to split open, thereby further creating a pressure relief passage through the split opening."

Art Unit: 1745

In reviewing the general disclosure of JP '751, the teachings therein show the general vent passage and seal/current collector arrangement wherein the vent passage is formed proximate to the current collector shaft adjacent a significant portion of the seal 6. Slight variations of the seal/current collector arrangement, including the particular arrangement of the instant claims are held as obvious variants which provide the same vent function. In addition, providing a relief passage between the seal itself and current collector reduces the number of seal process steps while still providing the same vent capability.

The motivation for providing the seal to form the vent passage between the seal and current collector shaft since it would have reduced the steps in forming the seal member while still provided the requisite and effective vent passage near or along the current collector shaft and adjacent to the seal.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of JP '751 by forming the vent passage between the seal and current collector shaft since it would have reduced the steps in forming the seal member while still provided the requisite and effective vent passage near or along the current collector shaft and adjacent to the seal.

Response to Arguments

4. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

5. Claims 6, 19 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP '751 in view of U.S. patent No. 5,888,909 (Pedicini).

The teachings of JP '751 have been discussed above and are incorporated herein.

The difference between the instant claims and JP '751 is that JP '751 does not teach or the connector being a compressible coil spring.

Pedicini teaches that the use of compressive coil springs as means for imparting a compressive force on internal components of a venting structure in an electrochemical cell.

The motivation for using a coil spring is that it provides an equivalent means for imparting a compressive force on the components in the electrochemical cell and equivalent response means for venting the cell under pressure buildup in the cell.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of JP '751 by using a coil spring since it would have provided an equivalent means for imparting a compressive force on the components in the electrochemical cell and equivalent response means for venting the cell under pressure buildup in the cell.

Response to Arguments

6. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Applicant provides no additional arguments to the rejection of claims 6, 19 and 36 apart from those drawn to the JP '751 patent alone as applied to respective independent claims.

Allowable Subject Matter

7. As set forth in the previous office action, claims 8-12, 25-27 and 38-42 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. See items 11 and 12 of the previous office action, incorporated herein.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 1745

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is (571) 272-1283. The examiner can normally be reached on Monday to Thursday from 9 a.m. to 6 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. FAXES received after 4 p.m. will not be processed until the following business day. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gregg Cantelmo
Primary Examiner
Art Unit 1745

gc



April 27, 2004